

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)**

**CLASS: IMSC
BRANCH: MATHS & COMP.**

**SEMESTER : VII
SESSION : MO/18**

SUBJECT: CS7103 COMPUTER GRAPHICS AND MULTIMEDIA

TIME: 3 HOURS

FULL MARKS: 60

INSTRUCTIONS:

1. The question paper contains 7 questions each of 12 marks and total 84 marks.
 2. Candidates may attempt any 5 questions maximum of 60 marks.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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- Q.1(a) Write the various usages of computer Graphics. Mention any input devices used in graphics and Multimedia. [6]
- Q.1(b) Describe working of raster scan display system with appropriate diagrams. [6]
- Q.2(a) Write in detail about Bresenham's line drawing algorithm. [6]
- Q.2(b) Describe Midpoint algorithm for circle and draw points for the circle with radius = 20 and centre at origin (0, 0). [6]
- Q.3(a) Explain different types of transformations (Any three). Describe them with proper equations and matrix representations. [6]
- Q.3(b) Write and explain any two types of line clipping algorithms. Illustrate with suitable examples. [6]
- Q.4(a) How has geometric data of polygon surfaces been stored? Write a general polygon surface equation and find its normal vector. [6]
- Q.4(b) Describe cubic spline interpolation method with an example. [6]
- Q.5(a) Write in detail about parallel and perspective projections. [6]
- Q.5(b) Describe parallel projection transformation operation for a regular parallelepiped view. [6]
- Q.6(a) What is visible surface detection method and what are different types of such methods? [6]
- Q.6(b) Explain Depth buffer's method for visible surface detection for a collection of solid objects. [6]
- Q.7(a) What are different types of light source? Describe in detail for basic illumination models. [6]
- Q.7(b) What are different polygon rendering methods? Write in detail about any one of them. [6]

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